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EXAMINER

NGUYEN, KHIEM D

ART UNIT PAPER NUMBER

2823

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,383

Applicant(s)

SHIGEYOSHI YOSHIDA

Examiner

Khiem D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21, 29-31 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) 22-28, 32-34, and 39-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 29-31 and 35-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The non-final rejection as set forth in paper No. (052504) mailed on May 28th, 2004 is withdrawn in response to applicants' amendments. A new rejection is made as set forth in this Office Action. Claims (1-21, 29-31 and 35-38) are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17, 19-21, 29, 30, and 35-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (Japan Pub. 09-326587, Translation).

In re claim 1, **Takahashi** discloses a semiconductor bare chip having an integrated circuit (page 1, paragraph [0001]) formed on front surface thereof, wherein a magnetic loss film 2 is formed on back surface of the semiconductor bare chip (pages 2-4, paragraphs [0018]-[0035] and FIGS. 1-15).

In re claim 2, **Takahashi** discloses wherein the magnetic loss film is a granular magnetic thin film (page 4, paragraph [0032]).

In re claim 3, **Takahashi** discloses wherein the granular magnetic thin film is a sputtered film formed by a sputtering method (page 2, paragraphs [0010]-[0011]).

In re claim 4, **Takahashi** discloses wherein the granular magnetic thin film is a vapor-deposited film formed by a vapor deposition method (page 2, paragraphs [0010]-[0011]).

In re claim 5, **Takahashi** discloses wherein a magnetic loss film 2 is formed on back surface of the semiconductor wafer (FIGS. 9-15).

In re claim 6, **Takahashi** discloses wherein the magnetic loss film is a granular magnetic thin film (page 2, paragraphs [0010]-[0011]).

In re claim 7, **Takahashi** discloses wherein the granular magnetic thin film is a sputtered film formed by a sputtering method (page 2, paragraphs [0010]-[0011]).

In re claim 8, **Takahashi** discloses wherein the granular magnetic thin film is a vapor-deposited film formed by a vapor deposition method (page 2, paragraphs [0010]-[0011]).

In re claim 9, **Takahashi** discloses wherein the magnetic loss member 2 is formed in a prescribed pattern in vicinity of the surface on one side of the semiconductor substrate; and the magnetic loss member and semiconductor substrate region on the surface are uniformly covered with an insulating film (page 2, paragraphs [0010]-[0011] and FIGS. 1-15).

In re claim 10, **Takahashi** discloses wherein the magnetic loss member 2 is formed over substantially entire surface of the semiconductor substrate (FIGS. 1-15).

In re claim 11, **Takahashi** discloses wherein the prescribed pattern is formed by the magnetic loss member and is a striped pattern (FIGS. 1-15).

In re claim 12, **Takahashi** discloses wherein the prescribed pattern is formed by the magnetic loss member and is a lattice pattern (FIGS. 1-15).

In re claim 13, **Takahashi** discloses wherein the prescribed pattern is formed by the magnetic loss member and is an island pattern (FIGS. 1-15).

In re claim 14, **Takahashi** discloses wherein the insulating film comprises at least one material selected from a group consisting of silicon oxide, silicon nitride, and silicon nitride oxide (pages 3-4, paragraph [0030]).

In re claim 15, **Takahashi** discloses a semiconductor substrate having a plurality of magnetic loss members **2** formed in a part thereof, wherein said magnetic loss members are formed in a prescribed pattern, each of the magnetic loss members being formed on an inside surface of each semiconductor device region which is separated by dividing the semiconductor substrate (FIGS. 1-15).

In re claim 16, **Takahashi** discloses a semiconductor substrate formed by joining a first semiconductor substrate member and a second semiconductor substrate member together, and having a magnetic loss member **2** formed in a part thereof, wherein at least one semiconductor substrate member of the first semiconductor substrate member and the second semiconductor substrate member is provided with a trench, which is formed on the surface thereof that is joined together, and the magnetic loss member **2** is embedded inside said trench (pages 2-4, paragraphs [0018]-[0035] and FIGS. 1-15).

In re claim 17, **Takahashi** discloses wherein the trench comprises a plurality of trench portions formed in a prescribed pattern, each of the trench portions being formed

on an inside surface of each semiconductor device region which is separated by dividing the semiconductor substrate (FIGS. 1-15).

In re claim 19, **Takahashi** discloses wherein material of the semiconductor substrate, the first semiconductor substrate member, and the second semiconductor substrate member, respectively, consists of silicon (pages 3-4, paragraph [0030]).

In re claim 20, **Takahashi** discloses wherein material of the semiconductor substrate, the first semiconductor substrate member, and the second semiconductor substrate member, respectively, consists of gallium-arsenic (pages 3-4, paragraph [0030]).

In re claim 21, **Takahashi** discloses a plurality of semiconductor devices that is repeatedly formed in a prescribed pattern on the semiconductor substrate according to claim 9, wherein each of the plurality of semiconductor devices comprises at least one unit region in which the magnetic loss member is formed (FIGS. 1-15).

In re claim 29, **Takahashi** discloses an electromagnetic noise suppression body comprising an electrically conductive soft magnetic thin film 2; and having a structure, wherein said soft magnetic thin film is finely divided into configuring units sufficiently small relative to wavelength of electromagnetic noise; and conduction of DC current between those configuring units is interrupted (pages 2-4, paragraphs [0018]-[0035] and FIGS. 1-15).

In re claim 30, **Takahashi** discloses wherein the soft magnetic thin film 2 has an aspect ratio of 10 or greater (pages 3-4, paragraph [0030]).

In re claim 35, **Takahashi** discloses an electromagnetic noise suppression body for suppressing conductive electromagnetic noise, comprising an electrically conductive

soft magnetic thin film 2 attached in vicinity above a microstrip line or signal transmission line similar thereto, wherein the electrically conductive soft magnetic thin film is of a shape having a width that is substantially equivalent to or narrower than line width of the microstrip line or signal transmission line similar thereto (pages 2-4, paragraphs [0018]-[0035] and FIGS. 1-15).

In re claim 36, **Takahashi** discloses wherein the electromagnetic noise suppression body is attached so that the axis of hard magnetization thereof is substantially parallel to the width direction of the microstrip line or signal transmission line similar thereto (FIGS. 1-15).

In re claim 37, **Takahashi** discloses wherein the soft magnetic thin film of a shape having a width that is substantially equivalent to or narrower than line width of the microstrip line or analogous signal transmission line has an aspect ratio in width direction of 10 or greater (pages 3-4, paragraph [0030]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 31, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn et al. (U.S. Patent 6,738,240).

In re claims 18, 31, and 38, **Takahashi** discloses that the magnetic loss member 2 is composed of iron alloy ingredients, such as pure iron, Sendust (Fe-Si-aluminum), Fe-

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Zr, Fe-Mn, Fe-Si, Fe-aluminum, Fe-aluminum-Si, and Fe-nickel-Mo (page 4, paragraph [0032]) but does not explicitly disclose wherein the magnetic loss member is composed of M-X-Y, where M is either any one of, or a mixture of, Fe, Co, and Ni, X is either an element other than M or Y, or a mixture thereof, and Y is any one of, or a mixture of, F, N, and O.

Ahn, however, discloses that the magnetic loss member is composed of M-X-Y, where M is either any one of, or a mixture of, Fe, Co, and Ni, X is either an element other than M or Y, or a mixture thereof, and Y is any one of, or a mixture of, F, N, and O (col. 6, lines 5-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Takahashi and Ahn to enable the magnetic loss member composed of M-X-Y of Takahashi to be formed and furthermore to obtain an integrated circuit capable of operating at high frequencies with high efficiency, low losses, and high magnetic permeability (col. 2, lines 31-34, Ahn).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K.N.
December 7th, 2004



W. DAVID COLEMAN
PRIMARY EXAMINER